INFORMATION DISCLOSURE
STATEMENT
Patent Application
Docket No. UGR-100XD1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Michael J. Adang

Filed : April 20, 2004

For : Phase Display of a Biologically Active *Bacillus thuringiensis* Toxin

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §§1.97 AND 1.98

Sir:

In accordance with 37 CFR §1.97 and §1.98(d), Applicants would like to bring to the attention of the Examiner, the references cited in the following patent application:

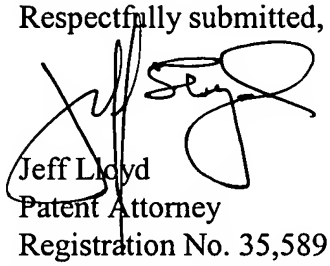
U.S. Serial No. 09/629,596; filed July 31, 2000

The subject application claims the benefit under 35 USC §120 of the filing date of the above U.S. Patent Application Serial No. 09/629,596. Applicants respectfully request that copies of references cited during prosecution thereof, be made of record in this application. As copies of the references filed in the parent application, and cited on the attached form PTO-1449, will be found in the parent casefile, copies of those references are not provided herewith.

It is respectfully requested that the references cited in the above-noted parent application be considered in the examination of the subject application and their consideration be made of record.

Applicants respectfully assert that the substantive provisions of 37 CFR §§1.97 and 1.98 are met by the foregoing statements.

Respectfully submitted,



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JL/srp
Enclosure: PTO-1449

Form PTO-1449 (REV. 7-80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. UGR-100X D1	SERIAL NO.
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	AP		Schwartz, J.-L., Y.J. Lu, P. Soehnlein, R. Brousseau, L. Masson, R. Laprade, and M. J. Adang (1997) "Ion channels formed in planar lipid bilayers by *Bacillus thuringiensis* toxins in the presence of *Manduca sexta* midgut receptors." *FEBS* lett. **412**:270-276.
	AQ		Dean, D. H., F. Rajamohan, M. K. Lee, S. J. Wu, X. J. Chen, E. Alcantara, and S. R. Hussain (1996) "Probing the mechanism of action of *Bacillus thuringiensis* insecticidal proteins by site-directed mutagenesis - A minireview." *Gene* **179**:111-117.
	AR		Hogrefe, H.H., J.R. Amberg, B.N. Hay, J.A. Sorge, and B. Shopes (1993) "Cloning in a bacteriophage lambda vector for the display of binding proteins on filamentous phage." *Gene* **137**:85-91.
	AS		Smith, G.P. and D. J. Ellar (1994) "Mutagenesis of two surface exposed loops of the *Bacillus thuringiensis* Cry1C d-endotoxin affects insecticidal specificity." *Biochem. J.* **302**:611-616.
	AT		Wabiko, H. and Yasuda, E. (1995) "*Bacillus thuringiensis* protoxin location of toxic border and requirement of non-toxic domain for high level *in vivo* production of active toxin." *Microbiology* **141**:629-639.

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	AP		Estruch J J, Carozzi N B, Desai N, Duck N B, Warren G W, Koziel M G. (1997) "Transgenic plants An emerging approach to pest control." *Nature Biotechnology* **15**:137-141.
	AQ		Chen, X.J., M.K. Lee, and D.H. Dean (1993) "Site-directed mutations in a highly conserved region of *Bacillus thuringiensis* d-endotoxin affect inhibitions of short circuit current across *Bombyx mori* midguts.," *Proc. Natl. Acad. Sci.* USA **90**:9041-9045.
	AR		Stemmer, W.P.C. (1994b) "DNA shuffling by random fragmentation and reassembly: *In vitro* recombination for molecular evolution." *Proc. Natl. Acad. Sci. U.S.A.* **91**:10747-10751.
	AS		Rajamohan, F., J.A. Cotrill, F. Gould, and D.H. Dean (1996) "Role of domain II, loop 2 residues of *Bacillus thuringiensis* Cry1Ab d-endotoxin in reversable and irreversable binding to *Manduca sexta* and *Heliothis virescens*." *J. Biol. Chem.* **271**:2390-2396.
	AT		Masson, L., Y.-J. Lu, A. Mazza, R. Brosseau, and M.J. Adang (1995) "The Cry1A(c) receptor purified from Manduca sexta displays multiple specificities." *J. Biol. Chem.* **270**:20309-20315.

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	AO		Sangadala, S., F.S. Walters, L. H. English, and M.J. Adang (1994) "A mixture of *Manduca sexta* aminopeptidase and phosphatase enhances *Bacillus thuringiensis* insecticidal Cry1A(c) toxin binding and $^{86}Rb\backslash K^{+}$ efflux *in vitro*." *J. Biol. Chem.* **269**:10088-10092.
	AP		Knowles, B.H. and J.A.T. Dow (1993) "The crystal delta-endotoxins of *Bacillus thuringiensis* - models for their mechanism of action on the insect gut." *Bioassays* **15**:469-476.
	AQ		Lee, M.K., B.A. Young and D.H. Dean (1995) "Domain III exchanges of *Bacillus thuringiensis* Cry1A toxins affect binding to different gypsy moth midgut receptors." *Biochem. Biophys. Res. Comm.* **216**:306-312.
	AR		Bosch, D., B. Schipper, H. Van Der Kleij, R.A. De Maagd, and W.J. Steikema (1994) "Recombinant *Bacillus thuringiensis* crystal proteins with new properties Possibilities for resistance management." *Biotechnology* **12**:915-918.
	AS		Feitelson, J.S., J. Payne, and L. Kim (1992) "*Bacillus thuringiensis* Insects and beyond," *Biotechnology* **10**:271-275.
	AT		Parmley, S.F. and Smith, G.P. (1988) "Antibody-selectable filamentous phage vectors affinity purification of target genes." *Gene* **73**:305-318.

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	AP		Bullock *et al.*, (1987) "XL1-Blue: A high efficiency plasmid transforming recA *Escherichia coli* strain with Beta-Galactosidase selection." *BioTechniques* 5(4). 376-379.
	AQ		Wolfersberger, M.G., Luthy, P., Maurer, A., Parenti, P., Sacchi, V.F., Giordana, B., and Hanozet, G.M. (1987) "Preparation and partial characterization of amino acid transporting brush border membrane vesicles from the larval midgut of the cabbage butterfly (*Pieris brassicae*)." *Comp. Biochem. Physiol.* 86A: 301-308.
	AR		Messing *et al.*, (1981) "A system for shotgun DNA sequencing," *Nucleic Acids Res.*, 9:309-321.
	AS		Zoller *et al.*, (1982) "Oligonucleotide-directed mutagenesis using M13-derived vectors: an efficient and general procedure for the production of point mutations in any fragment of DNA." *Nucleic Acids Res.* 10:6487-6504.
	AT		Hofmann, C., H. Vanderbruggen, H. Hofte, J. Van Rie, S. Jansens, and H. Van Mellaert. (1988) "Specificity of *Bacillus thuringiensis* d-endotoxins is correlated with the presence of high affinity binding sites in the brush border membrane of target insect midguts." *Proc. Natl. Acad. Sci.* USA 85:7844-7848.

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	AO		Keohavong, P., and Thilly, W.G. (1989) "Fidelity of DNA polymerases in DNA amplification," *Proc. Natl. Acad. Sci. U.S.A.* **86**:9253-9257.
	AP		Ge, A.Z. *et al.* (1989) "Location of the Bombyx mori specificty domain on a *Bacillus thuringiensis* Delta-endotoxin protein." *Proc. Natl. Acad. Sci* USA **86**:4037-4041.
	AQ		Crea *et al.* (1978) "Chemical synthesis of genes for human insulin," *Proc. Nat'l. Acad. Sci. USA* **75**:5765-5769.
	AR		English, L. and Readdy, T.L. (1989) "Delta endotoxin inhibits a phosphatase in midgut epithelial membranes of *Heliothis virescens*," *Insect Biochem.* **19**:145-152.
	AS		Hunter, W. and Greenwood, F. (1962) "Preparation of iodine-131 labeled human growth hormone of high specific activity." *Nature* **194**:495-496.
	AT		Cadwell, R., and Joyce, G. (1994) "Mutagenic PCR," *PCR Methods/Appl.* **32**:S136-S140.

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	AO		Cadwell, R., and Joyce, G.F. (1992) "Randomization of genes by PCR mutagenesis," *PCR Methods Appl.* **2**:28-33.
	AP		Li, J., Carroll, J., and Ellar, D.J. (1991) "Crystal structure of insecticidal d-endotoxin from *Bacillus thuringiensis* at 2.5 A resolution," *Nature* **353**:815-821.
	AQ		Knight, P.J., N. Crickmore, and D.J. Ellar (1994) "The receptor for *Bacillus thuringiensis* Cry1A(c) delta-endotoxin in the brush border membrane of the lepidopteran *Manduca sexta* is aminopeptidase N," *Molec. Microbiol.* **11**:429-436.
	AR		Stemmer, W.P.C. (1994a) "Rapid evolution of a protein *in vitro* by DNA shuffling," *Nature (London)* **370**:389-391.
	AS		Lambert, B. and Peferoen, M. (1992) "Insecticidal promise of *Bacillus thuringiensis*," *Bioscience* **42**:112-122.
	AT		Stewart, C.N., M.J. Adang, J.N. All, H.R. Boerma, G. Cardineau, D. Tucker, and W.A. Parrott (1996) "Genetic transformation, recovery, and characterization of fertile soybean transgenic for a synthetic *Bacillus thuringiensis cry1Ac* gene," *Plant Physiol.* **112**:121-129.

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	AP		Scott, J. K. and Smith, G. P. (1990) "Searching for peptide ligands with an epitope library." *Science* **249**:386-390.
	AQ		Bartel, D., and Szostak, J. (1993) "Isolation of new ribozymes from a large pool of random sequences," *Science* **261**:1411-1418.
	AR		De Maagd, R. A., H. van der Kleij, P. Bakker, W.J. Stiekema, and D. Bosch (1996) "Different domains of *Bacillus thuringiensis* d-endotoxins can bind to insect midgut membrane proteins on ligand blots," *Appl. Environ. Microbiol.* **62**:2753-2757.
	AS		Garczynski, S.F., Crim, J.W., and Adang, M.J. (1991) "Identification of putative insect brush border membrane-binding molecules specific to *Bacillus thuringiensis* d-endotoxin by protein blot analysis." *Appl. Environ. Microbiol.* **57**:2816-2820.
	AT		Lee, M.K., F. Rajamohan, F. Gould, and D.H. Dean (1995) "Resistance to *Bacillus thuringiensis* Cry1A d-endotoxins in a laboratory-selected Heliothis virescens strain is related to receptor alteration." *Appl. Environ. Microbiol.* **61**:3836-3842.

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	AP		Van Rie, J., S. Jansens, H. Hofte, D. Degheele, and H. Van Melleart (1990) "Receptors on the brush border membrane of the insect midgut as determinants of the specificity of *B. thuringiensis* delta-endotoxins," *Appl. Environ. Microbiol.* 56:1378-1385.
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	AS		Smith, George P. (1988) "Filamentous Phage Assembly: Morphogenetically Defective Mutants That Do Not Kill The Host." *Virology* 167:156-165.
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